CITY OF LODI

COUNCIL COMMUNICATION

AGENDA TITLE: Authorize City Manager to Enter Into a Contract with Brown & Caldwell to Update City of Lodi's Urban Water Management Plan

MEETING DATE: September 20, 2000

PREPARED BY: Public Works Director

RECOMMENDED ACTION: That the City Council authorize the City Manager to execute a contract with Brown & Caldwell to update Lodi's Urban Water Management Plan and appropriate $25,000 for the project.

BACKGROUND INFORMATION: The California Urban Water Management Planning Act requires that each urban water supplier providing water for municipal purposes either, directly or indirectly, to more than 3,000 customers, or supplying more than 3,000 acre-feet of water annually, prepare, update, and adopt its urban water management plan (UWMP) at least once every five years. Lodi exceeds both these criteria and the next plan is due by December 31, 2000.

Lodi completed its original UWMP in 1991, a required addition in 1993, and the required update in 1995. Attached is a checklist of the items required to be addressed in the UWMP. There are numerous new provisions required in the 2000 update. City staff will provide much of the information for many areas of the update.

Many of the new provisions can be completed more efficiently by a consultant familiar with UWMP's. Brown & Caldwell is a firm with a good reputation that is completing UWMP's for numerous water suppliers and has completed several other projects for the City of Lodi. Attached is Brown & Caldwell's proposal to prepare Lodi's UWMP.

There is no direct penalty for not updating the UWMP. However, not updating the plan can adversely effect Lodi's ability to procure certain loans and grants from the State.

FUNDING: The money for this project will come from the Water Utility. A portion ($10,000) is available in the Water Operating Budget and the balance ($15,000) is from Water Fund balance.

Project Estimate: $ 25,000

Funding Available: _____
Vicky McAthie, Finance Director

_____
Richard C. Prima, Jr.
Public Works Director

Prepared by Frank Beeler, Assistant Water/Wastewater Superintendent
RCP/FEF/dsg
Attachments
cc: Fran E. Forkas, Water/Wastewater Superintendent
Frank Beeler, Assistant Water/Wastewater Superintendent

APPROVED: _____
H. Dixon Flynn -- City Manager

2000 Urban Water Management Plan Checklist

Checklist Organized According to Water Code Section

Section of Law	Items to address
10620 (d) (2)	Coordinate the preparation of its plan with other appropriate agencies, including direct and indirect suppliers, wastewater, groundwater, and planning agencies (refer to Section 10633).
10631 (a)	Provide current and projected population in 5-year increments to 20 years.
"	Describe the climate and other demographic factors.
10631 (b)	Identify and quantify the existing and planned sources of water available in 5-year increments to 20 years.
10631 (c)	Describe the reliability of the water supply.
"	Describe the vulnerability of water supply to seasonal or climatic shortage.
"	Describe average, single dry and multiple dry water year data.
"	Describe any plans to replace inconsistent water sources.
10631 (d)	Describe opportunities for exchanges or transfers of water on short-term or long-term basis.
10631 (e) (1)	Quantify past and current water use in 5-year increments to 20 years.
10631 (e) (2)	Identify projected water uses among water use sectors in 5-year increments to 20 years.
10632 (a)	Provide water shortage stages of action, including up to a 50 percent reduction, outlining specific water supply conditions at each stage.
10632 (b)	Provide minimum water supply estimates based on driest three-year historic sequence.
10632 (c)	Provide actions a water supplier will take to prepare for a catastrophe.
10632 (d)	Provide mandatory prohibitions.
10632 (e)	Provide consumption reduction methods.
10632 (f)	Provide penalties or charges.
10632 (g)	Provide an analysis of the impacts on the water supplier revenues and expenditures.
10632 (g)	Provide measures to overcome revenue and expenditure impacts.
10632 (h)	Provide a copy of a draft water shortage contingency resolution or ordinance.
10632 (i)	Provide a mechanism for determining actual reductions in water use.
10633 (a)	Describe the wastewater collection and treatment systems in the supplier's service area.
"	Quantify the amount of wastewater collected and treated in the supplier's service area.
"	Describe the methods of wastewater disposal in the supplier's service area.
10633 (b)	Describe the type, place, and quantity of recycled water currently used in the supplier's service area.
10633 (c) (d)	Describe and quantify potential uses of recycled water in 5-year increments to 20 years.
"	Describe the technical and economic feasibility of serving potential recycled water users.
10633 (e)	Describe the actions that may be taken to encourage recycled water use.
"	Provide the projected acre-feet results of recycled water used per year.
10633 (f)	Provide a plan for optimizing the use of recycled water in the supplier's service area.
"	Provide actions to facilitate the installation of dual distribution systems and to promote recirculating uses.
10635 (a)	Provide an assessment of the reliability of the water supplier's water service to its customers during normal, single dry, and multiple dry water years.
"	Compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in 5-year increments (refer to 10631 (c)).
"	Compare normal, single dry, and multiple dry water year projected water supply sources available to the water supplier with the normal, single dry, multiple dry water year projected water uses (refer to
10642	Make plan available for public inspection before its adoption.
"	Adopt plan as prepared or as modified after the public hearing

Scope of Work

Preparation of Urban Water Management Plan

This scope of work consists of preparing an urban water management plan (plan) for the City of Lodi (City). The objective for the urban water management plan is to fulfill the requirements of the California Urban Water Management Planning Act and the reporting requirements of the California Urban Water Conservation Council.

The scope of work consists of several tasks that are in conformance with the Urban Water Management Plan Checklists and Worksheets provided by the California Department of Water Resources.

Task 1. Detailed Water Management Plan Outline

Before starting the detailed preparation of the urban water management plan, a detailed outline will be prepared for review with City staff. The goal is to reach a consensus regarding the detailed outline, structure, and content of the plan.

Task 2. Data Collection and Review

Pertinent information needed to prepare the urban water management plan will be collected and reviewed. A written data request will be submitted to the City. The data and information will be reviewed to become acquainted with the service area, existing sources of supply, transmission and distribution facilities, existing system operations, historical demands, potential sources of supply, and any other information as required to prepare the urban water management plan.

Task 3. Description of Water System (Supplier Service Area)

The characteristics of the water system including geographic location, demographic information, customer description, climate, system facilities, and sources of supply will be described. We will utilize the information in the last master plans prepared for the City, and update the information to reflect recent changes. The following subtasks describe the work for this task.

Task 3.1–Prepare Service Area Map

A map for inclusion in the plan depicting the service area and principal features of the water system will be prepared.

Task 3.2–Describe Existing Water Systems

A description of the climate, geography, and characteristics of the water system will be presented. The physical characteristics of the water system, including significant supply and distribution facilities, will be described.

Task 3.3–Describe Existing and Future Land Use and Population

Existing and future population, dwelling units, and employment will be quantified using available census data, state information, and other information sources. The number of existing customers broken down by customer category will be presented. The existing population and land use will be used under Task 7 to develop the unit water demand factors.

Task 4. Agency Coordination

Assistance will be provided to the City to coordinate preparation of the plan with appropriate agencies, including other water suppliers, water management agencies, and relevant public agencies.

Task 5. Water Use

Past and current water use will be quantified and projected in 5-year increments to 20 years, identifying the uses among water use sectors. The following subtasks describe the work for this task.

Task 5.1–Describe Existing Water Use Characteristics

Existing and historical water use will be defined in terms of annual, monthly, and maximum day demand. Maximum day and peak hour peaking factors will be determined. Unit water demands (gallons/capita/day) for major user classes will be developed. The unit water demands will be used to project future water use.

Task 5.2–Develop Future Water Requirements

Future water requirements using the unit water demand factors and future population and employment will be developed. Future water requirements will be expressed for each year to 20 years and for buildout conditions. Future water requirements will be presented in terms of annual and maximum day use.

Task 6. Water Supplies

The existing and planned sources of water available to the City in 5-year increments to 20 years or as far as data are available will be identified and quantified. These sources include local water supplies (groundwater, surface water, recycled water, other), imported water supplies (local and regional water wholesalers and interconnections with neighboring systems), and potential water supplies from any other source.

Task 6.1–Transfer or Exchange Opportunities

Opportunities for exchanges or transfers of water on a short-term or long-term basis for each water system will be described.

Task 6.2–Inconsistent Water Source

For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality or climatic factors, plans to replace that source with alternative sources or water demand

management measures to the extent practicable will be described. The factors that make a water source inconsistent will be explained. Actions to remove factors that prevent a consistent water supply and/or possible water supplies that could replace inconsistent supplies will be described.

Task 6.3–Three-Year Minimum Water Supply

An estimate of the minimum water supply available during each of the next 3 water years based on the driest 3-year historic sequence for the City's water supply will be provided.

Task 6.4–Water Supply Reliability

The reliability and vulnerability of the water supply to seasonal or climatic shortage will be described. The number of years the water supply is expected to enter a Stage 1, or greater, water shortage over 20 years will be defined.

Task 6.5–Water Supply Reliability Comparison

Water supply reliability data will be presented for an average water year, a single dry water year, and multiple dry water years, based on historical water supply data.

Task 7. Recycled Water Potential

The plan will include a description of the wastewater collection and treatment systems in the service area and the potential for use of recycled water.

Task 7.1–Wastewater Generation, Collection, and Treatment

The plan will provide quantification of the current and projected future amounts of wastewater collected and treated in the service area.

Task 7.2–Wastewater Disposal and Recycled Water Uses

Recycled water and its potential for use as a water source in the service area will be addressed. The plan will describe methods of wastewater disposal in the service area. The plan will also include a description of the recycled water currently being used in the service area, including the type, place, and quantity of use. Potential uses of recycled water will be identified and quantified, including agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge and other appropriate uses. The technical and economic feasibility of serving those uses will be determined based on information available from the local wastewater agency. The use of recycled water within the service area will be projected for 5, 10, 15 and 20 years.

Actions that might to be taken to encourage recycled water uses, and projected results of these actions in terms of acre-feet of recycled water used per year will be identified and described.

The plan will provide a recycled water use optimization plan that includes actions to facilitate the installation of dual distribution systems and promotes recirculating uses.

The work under this task will be based on information and evaluations available from the local wastewater agency.

Task 8. Water Supply and Demand Comparison

The total water supply will be compared to total projected water use. This water supply and demand comparison will compare the total water supply sources available with the total projected water use over the next 20 years, in 5-year increments, for a normal water year, a single dry water year, and multiple dry water years.

Task 9. Description and Evaluation of Water Conservation Best Management Practices

This task consists of presenting a description of current water management activities and an economic evaluation of water conservation best management practices (BMPs). An economic evaluation will be conducted only for those BMPs not proposed for implementation. The following subtasks describe the work for this task.

Task 9.1–Summarize Water Management Accomplishments

Brown and Caldwell will summarize the water management activities conducted in the system. Current and recent water management programs implemented by the City will be documented.

Task 9.2–Define Water Management Programs

A list of water management practices will be developed. Each water management practice will be described.

Task 9.3–Develop Cost Estimates

Cost estimates for each of the water management activities to be evaluated will be prepared. Costs will be expressed as capital, operations and maintenance, present worth, and cost per acre-foot of supplied water.

Task 9.4–Estimate Water Savings

Water savings from each of the BMPs to be evaluated will be estimated. Data sources will include the estimates of reliable water savings for Best Management Practices (BMPs) including the *Memorandum of Understanding Regarding Urban Water Conservation in California* (MOU) and data prepared by others.

Task 9.5–Prepare Economic Analysis

An economic analysis of conservation measures proposed to not be implemented will be prepared for the water system. The costs of the water management program will be summarized. Dollar savings from reduced water demand will be quantified, including reduced water

system operating costs, capital outlay, and savings in energy to the customer. A benefit/cost analysis will be prepared. A summary of the benefit/cost ratio of each water management program alternative will be provided. Water management programs will be recommended for implementation.

Task 9.6–Summary of Water Management Programs Considered But Not Recommended

Brown and Caldwell will describe programs which were considered but not recommended. The reasons why these programs were not recommended will be discussed.

Task 10. Water Shortage Contingency Plan

An urban water shortage contingency plan will be prepared. Brown and Caldwell will identify and evaluate actions to be undertaken to prepare for and implement during a catastrophic interruption of water supplies, including a regional power outage, an earthquake, or other disaster.

The water shortage contingency analysis will include actions in response to water supply shortages including up to a 50-percent reduction in water supply. Stages of action to be undertaken by the City will be described, including a description of water supply conditions for each stage.

Mandatory prohibitions against specific water use practices during water shortages will be recommended, including use of potable water for street cleaning. Penalties or charges for excessive use will also be defined.

Appropriate consumption reduction methods will be evaluated for the service area for their ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply. Mechanisms for determining actual water use reductions will be defined.

The effect of these actions and conditions on revenues and expenditures will be described. Measures to overcome the revenue and expenditure impacts will be proposed.

Task 11. Water Supply Alternatives

Based on the projected water demands and the characteristics of the existing water supply for the system, an evaluation of water supply alternatives to meet the current and projected water demands will be prepared. This task will include an evaluation of the impacts of current and pending drinking water regulations on the alternative water supplies of the system.

Evaluation criteria including economics, reliability, water quality and environmental factors will be developed. An evaluation matrix will be prepared comparing the water supply alternatives. The adequacy of the existing and alternative supply sources to meet future demands and expected regulations will be summarized. Recommendations for water

supply which will reliably and economically satisfy the long-term water needs will be made.

Task 12. Plan Preparation

Task 12.1–Draft Plan

A draft plan will be prepared for the water system incorporating the results of the above tasks. Brown and Caldwell will submit a first and second draft plan. Five copies of each of the draft reports will be submitted to the City.

Task 12.2–Exemption Submittal/Report to California Urban Water Conservation Council

An exemption submittal for the California Urban Water Conservation Council will be prepared, if requested by the City, for water conservation measures that will not be implemented for economic or other reasons. This task is not included in the fee estimate.

Task 12.3–Final Plan Document

Based on the results of the public hearings under Task 13, the final plan will be prepared. Ten copies of the final plan will be submitted, as well as an electronic copy.

Task 13. Public Participation

As required by the Urban Water Management Planning Act and subsequent amendments, a public hearing regarding the water management plan must be conducted. Brown and Caldwell will provide assistance to the City if requested. This task is not included in the fee estimate.

Task 14. Meetings

Brown and Caldwell will attend up to three meetings with City staff to review work progress.